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is bright. Do not let anyone think he can raise horses for nothing, neither let him he convinced that under no conditions does it pay to raise them. It has paid and it will pay again. It is something like the experienced Scotch sheepman who was addressing a meeting and advising sheep caising. He was questioned as to whether or not certain branches of farming paid, and some reckoned that counting everything these branches were operated at a loss. The Scotchman had done well on his farm and his reply contained considerable truth. "Ah well, he said, "I dinna ken what paid, but I ken there was a something paid." So with the whole situation.

THE FARMER'S ADVOCATE.

What Does It Cost You to Produce Pork?

LIVE STOCK.

The present high prices of grain and all kinds of feeding stuffs have practically revolutionized the feeding business. It is an especially difficult matter to make pork, at present market prices for the finished product and for grain and feed, at a profit. A speaker, addressing an audience of farmers a few days ago, made the statement that he was able, even at present high prices, to produce pork at from 5 cents to 6 cents per pound. Good feeders present challenged the statement, and the speaker claimed to be able to feed a pen of 9 hogs weighing from 140 to 150 pounds each on 21 pounds of mixed meal per day. It does not seem to us that very rapid gains would result from such small feeding, and for the benefit of our readers we would be pleased to get from practical hog feeders statements of just what it is costing them to produce pork at the present time, and such articles might also contain some valuable hints for feeders to help them keep down cost of production.

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Ventilation a Big Factor in Sanitary Stables.

It may be a little late in the season to say a word on ventilation, but nevertheless many farmers still have considerable planning to do in conwith the over-hauling of their stables nection during the coming summer, or the building of new barns and stables. In going from place to place in the country one of the most noticeable features in connection with the stabling of live stock is the small measure of attention which is given to ventilation. This is true of the poultry house, the pig-pen, the cattle stable and the horse barn. Many seem to think that plenty of fresh air may be taken into the building by open doors and windows, and that it requires no specially prepared outlets to carry off the foul We were in stables just a few days ago which were dripping wet with moisture, having no outlets for foul air, and, notwithstanding the fact that top doors were open, the stables were stuffy, the ventilation being decidedly bad.

Ventilation is a comparatively simple matter and may be installed at very little cost, especially when the building is in course of construction. It is necessary in any ventilating system which is to prove of greatest worth to the farmer, to have it simple in construction and built so that practically speaking no time or trouble is involved in its operation. Complicated systems are a nuisance, and generally prove about as ineffective as no ventilation at all. As has often been outlined in these columns there are two wellknown systems of ventilation and modifications Some prefer the King system, others of these. the Rutherford, and some a combination of the two.

THE KING SYSTEM.

The King system, as shown in the accompanying illustration, is so arranged that the foul air is drawn off at the floor, and the fresh air enters the stable at the ceiling. It is claimed by the advocates of this system that since carbonic acid gas is the chief impurity in the stable, and since this gas is heavier than pure air it is likely to be found in largest quantities near the floor, and, therefore, outlets for the impure air should begin near the floor level. The inlet is shown in the diagram running from A to C. The outlet begins at B, the foul air goes up the tube and out at a ventilator at the top of the building E. It is generally believed that the outlets which are put in on either side of the stable should be placed at intervals of about 10 feet. In installing this system it is necessary to provide for (it when building the walls and the cross sectional area of each inlet should be at least 60 square inches. It is easily seen that there is an objection to this system which necessitates the use of so many long pipes or boxes to admit pure air and to discharge the foul air.

THE RUTHERFORD SYSTEM.

The Rutherford system is equally well known to careful readers, and is perhaps most commonly used. The air enters at or near the floor level, or some times under the floor. Many consider the plan shown in our diagram the best method of bringing in the fresh air. It is simple in manipulation, and is a system which has met with the favor of many stockmen who have it installed. The air current when it enters the stable takes an upward direction, as indicated by the arows, but the air diffuses throughout the stable very well and is carried off through the ventilator in front of the cattle as indicated in the illustration. In arranging for the intakes it is necessary to construct so as to direct the incoming fresh air upwards rather than outwards or horizontally across the room. Outlets also must be large and straight. The outlets begin at the ceiling, and it is generally thought advisable to have them controlled. Some system, as is commonly seen in an ordinary stove-pipe, may be used to good advantage. Outlets should always extend a foot or so beyond the highest point of the roof, so that it is better that they come out through the roof mear or at the peak if possible. These air shafts should be air tight

Upon the capacity and arrangement of the intakes and outlets depends the success of the ventilating system. The total cross section area of intake should provide for at least 15 square inches per head of cattle or horses housed; that means one square foot of intake for each 10 head. It is generally considered wise to build the outlets with double the capacity of the inlet, or 30 square inches of outlet for each animal stabled. In putting in the inlets it is well to plan to have the air entering the stables from as many sides as possible. No openings should be less than four inches wide and 10 inches long. In the Rutherford system the inlets should not be controlled. It is not advisable to depend upon the herdsman to look after this matter. It is very easy to forget to change the control, and ventilation may be had unless the fresh air is allowed to enter freely at all times. In very cold weather some drop a piece of cotton or sacking over the opening to decrease the rate of inflow of fresh air. In building outlets they should never be less than 18 inches across, shafts smaller than this have been found to be unsatis-Outlet shafts, as previously stated, should begin at the ceiling and near the centre of the building. If constructed of lumber they are best built with two layers of boards with an air space between. If constructed of single boards, be sure to use matched lumber Galvanized iron makes a very good outlet. In a new barn which we built at Weldwood last summer, and which contains our horse stable and five large box stalls for cattle, we placed two galvanized iron ventilation outlets. These are round pipes 18 inches in diameter, and they extend down to within about a foot and a half of the floor and have a regulated opening near the ceiling. This opening is arranged to slide much as the damper works in an ordinary stove-pipe. These extend through the roof and have no hood on them. The first ventilators of this kind that we ever saw were in use in a barn in Norfolk County on a farm which was described in these columns. They were giving good satisfaction there and they have done good work in our stable, so that as an outlet we think these are about as satisfactory and as economical as one can instal. Where plenty of inlets are put in through the walls of the stable as suggested in the Rutherford plan and an arrangement constructed on the inside of these inlets to turn the air up in the stable and prevent a direct draft on the stock, and plenty of galvanized iron outlets put in, we feel sure that it would be

found to be a very satisfactory system of $\mathsf{ventil}_{\mathtt{a}}$ tion.

In constructing new stables or remodelling old ones ventilation should be one of the first considerations. Even in the hen-house it is necessary to have plenty of fresh air. This is where the open front house wins out in the end over a too warmly built structure. Even a cotton front, unless the cotton is kept clean at all times, may give poor ventilation. Fresh air must be admitted into every building, and the foul air must have a means of escape, otherwise the air in that building is sure to become stuffy, laden with moisture, and unhealthful for the animals enclosed.

The Economics of Hog Feeding.

Perhaps the market for hogs fluctuates more than for any other kind of live stock. One read son for this is the ease and rapidity with which they may be bred and reproduced, which, when condensed, simply means the application of the law of supply and demand. The supply may be manipulated at times, but it is the supply which makes the manipulation possible. Markets for hogs have assumed a very jaundiced complexion in the past for no apparent reason on the part of the country and the supply, but at the pressent time we must look upon the price of pork to be in sympathy with other food products which the farmer turns off in the form of meat. The raiser of hogs has always been in a precarious position. Too often for his own good his excellent herd of brood sows has been duplicated in the same season by a large number on other farms which were established for the same rea-Prices had been high, breeding stock had sons. been increased. The results are obvious. The breeder of hogs who has made money is the man who did not "plunge," as Prof. G. E. Day states the position.

An elderly gentleman who had observed the ways of the world once told his son, "when every one else is running you stand." This is good advice when applied to the swine industry, but one should first agree with himself as to what number of hogs his farm will conveniently maintain, number his breeding stock accordingly and then stand. On every holding where mixed farming is practiced swine have a place. They are a line or a sideline that will consume a





2-The Rutherford System.

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